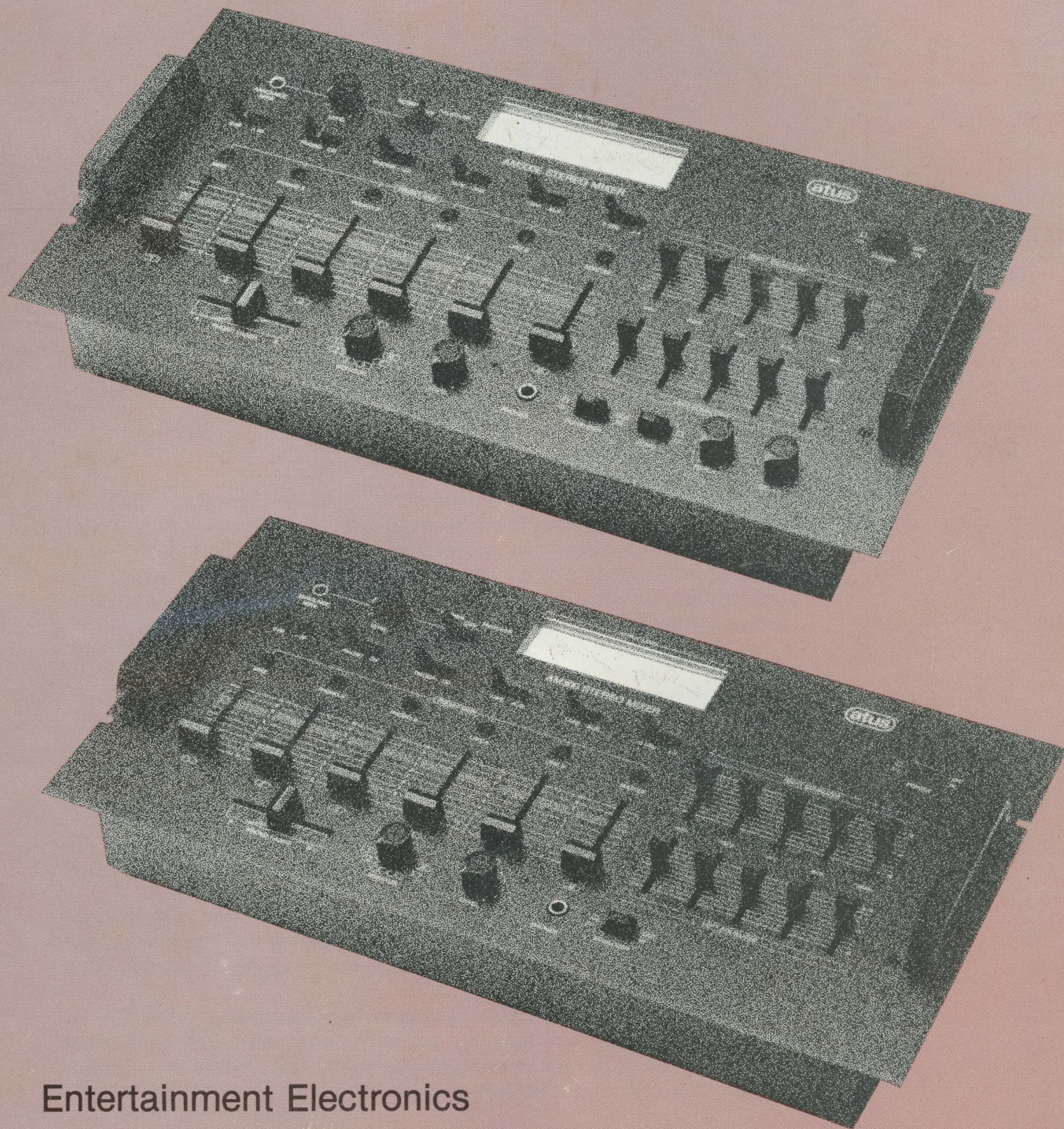
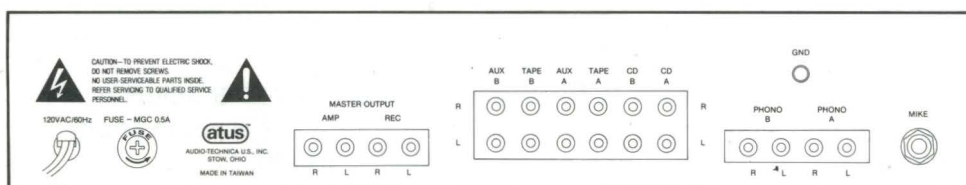
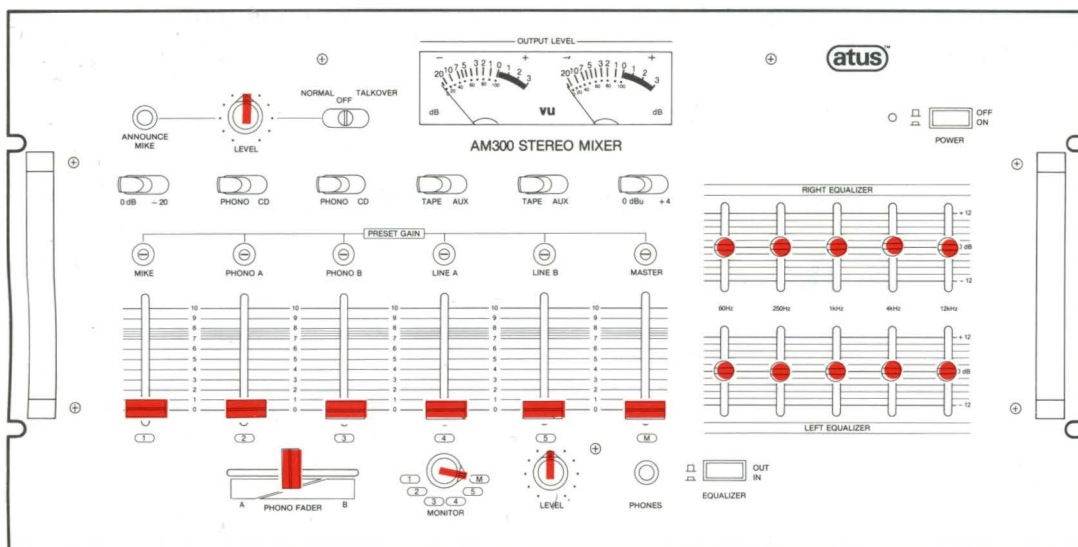




AM300/300E MIXER OWNERS MANUAL



Entertainment Electronics



The ATUS AM300 and AM300E stereo mixers allow maximum flexibility in audio signal processing. The six-channel AM300 will accept signals from two phono turntables, two Compact Disc players, two tape decks, two auxiliary signal sources, a microphone, and an announce microphone. These signals can be individually mixed and balanced. Special gain preset controls allow precise setting of maximum signal levels, to avoid overloading and permit more convenient mixing.

A fader circuit controls the relative levels of the PHONO A and PHONO B signals, for smooth transitions between selections. A special "talkover" circuit automatically lowers all music signals by 10 dB, for better microphone intelligibility during announcements.

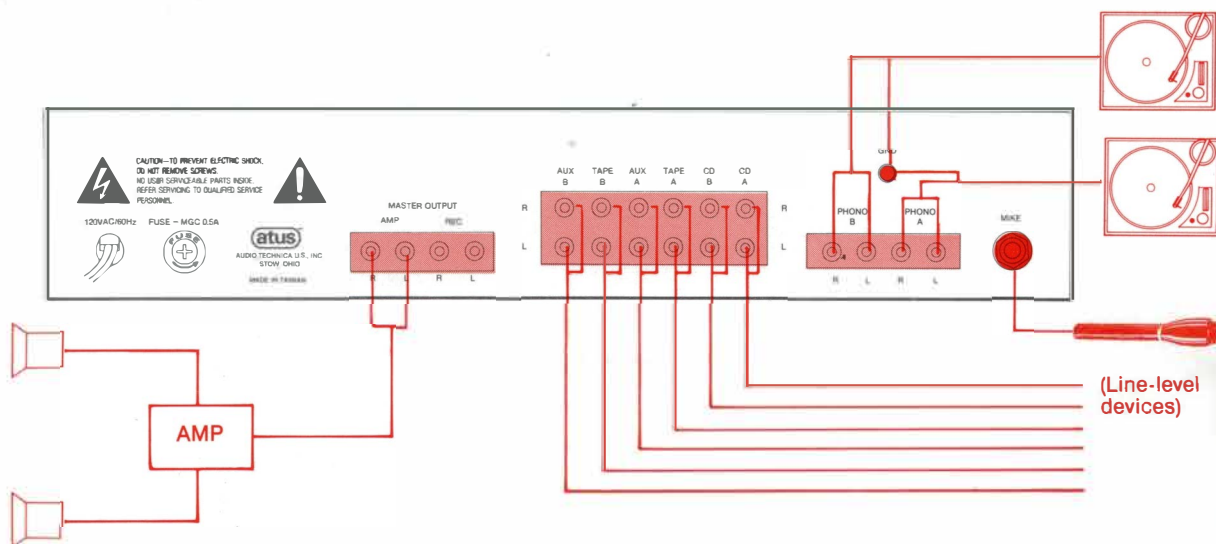
A flexible monitoring section allows any single channel to be heard individually through stereophones, so one turntable or tape deck can be "cued up" while another is playing through the main output.

The output of the mixer can be routed through dual independent 5-band stereo equalizers, for precise tailoring of frequency response. The master output levels are displayed on the dual VU meters.

The AM300E is functionally identical to the AM300 with the addition of a high-quality BBD echo circuit. "Repeat" amount and "Delay" time are continuously adjustable. This circuit can produce effects ranging from rapid "slapbacks" to reverberation and discrete echoes. The echo effect may be switched in or out as desired.

INITIAL SETUP

Make sure the AM300, and all devices to be connected to it, are turned OFF before attempting any setup.



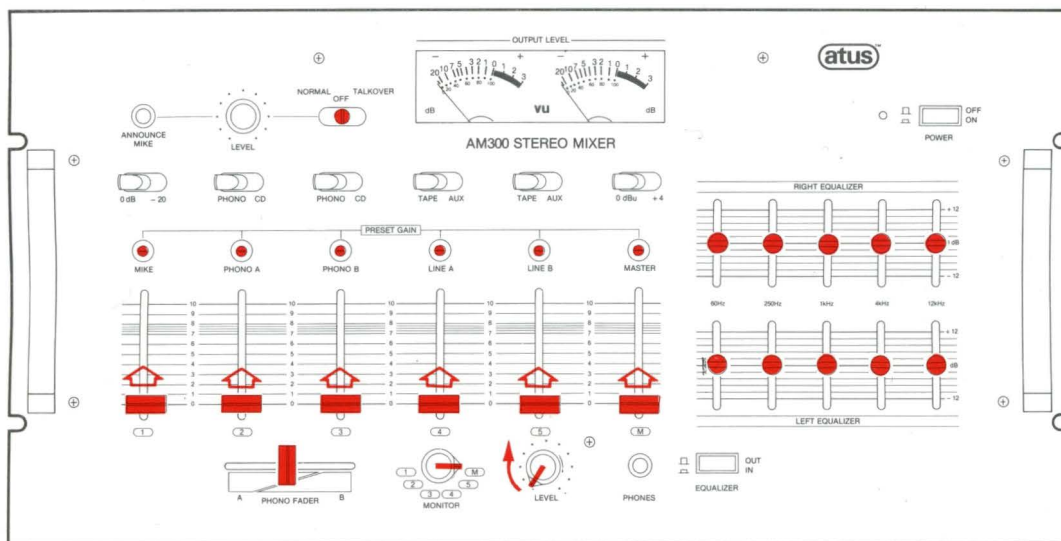
1. Connect phono turntables to the PHONO A and PHONO B inputs. Connect a ground wire from the turntable chassis to the GND post (many turntables have this wire built in the connecting cable).

NOTE: The PHONO A and PHONO B inputs are specially equalized for moving-magnet cartridges. Do **not** use these inputs for regular line-level devices.

2. Connect Compact Disc players (or other line-level devices) to the CD A and CD B inputs.
3. Connect the outputs of tape decks to the TAPE 1 and TAPE 2 inputs.
4. Connect any two other stereo line-level devices (such as a second AM300, or electronic musical instruments) to the AUX A and AUX B inputs.
5. Connect a microphone to the rear-panel MIKE jack. The level of this microphone is controlled by the MIKE level control on the front panel, along with the "0/-20 dB" switch. (Leave the switch in the "0 dB" position unless input overload occurs.)
6. Connect a microphone to the front-panel ANNOUNCE MIKE jack. The level of this microphone is controlled by the associated LEVEL control, along with the NORMAL/OFF/TALKOVER switch.
7. Connect a set of stereo headphones to the front-panel PHONES input.
8. Connect the AMP outputs to the inputs of a stereo power amplifier. (The AM300 will not directly drive a set of speakers.)
9. If desired, connect the REC output jacks to the input of a tape recorder. The REC and AMP output jacks are wired in parallel, permitting recording of the final mixed signal going to the amplifier.

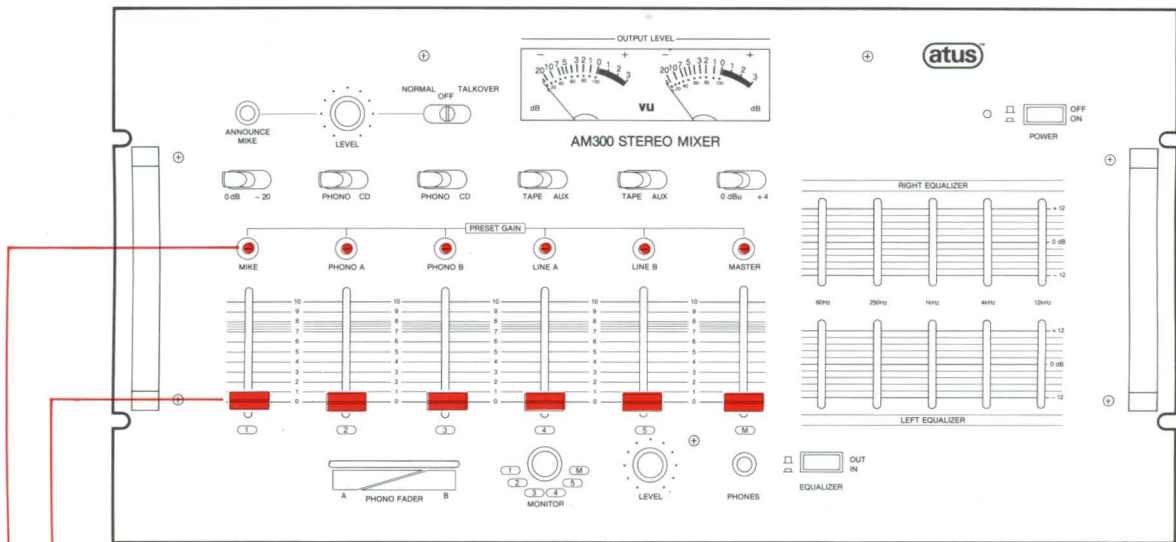
OPERATION

1. Turn on all the signal sources connected to the AM300, but do not start playing any music. (Do not turn on the mixer itself, or the power amp.)
2. Set the controls on the AM300 as shown:



3. Turn on the AM300. Move the monitor switch to M (Master). While listening through the stereophones, **slowly** turn up the stereophone LEVEL control. Check for any unusual noises.
4. Bring up the channel level controls (to about "5") slowly, one at a time. If there is any hum or noise, check the signal sources and the connections to the AM300.
5. Turn down all the channel level controls. Set the MASTER level control to the shaded area between 7 and 8. Start a record playing on PHONO A. Bring the PHONO A level control up to between 7 and 8. If the VU meters go above 0VU, turn down the PHONO A PRESET GAIN adjustment so the meters only occasionally peak above 0VU.
6. Repeat Step 5 for all the channel inputs being used. Now the mixer channel gains are balanced for best performance and most convenient use.
7. Turn down the level control on the power amp. (If there is a BALANCE control, set it to the center position.) Turn on the power amp and turn up the level control, setting it for a comfortable listening level when the meters show 0VU. If the amplifier needs more signal to achieve a good listening level, put the mixer output switch in the "+ 4 dBu" position. (The meter indication will not change, but signal to the amp will increase by 60%).

MIXER CONTROLS



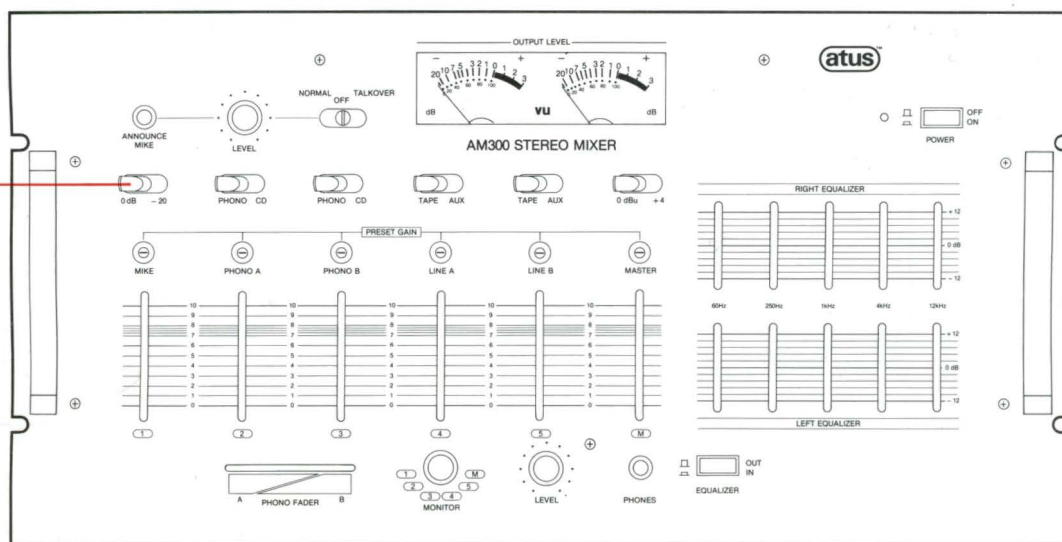
CHANNEL LEVEL CONTROLS

These level controls are the primary control point for the mixing of all incoming signals. The optimum operating point for the level controls is in the shaded area between 7 and 8.

PRESET GAIN CONTROLS

These trimpots just above the channel level controls determine the maximum output of the level controls. If the output level of the signal source connected to the AM300 is too "hot" (if the VU meters peak when the level control is barely turned up), this adjustment can bring it down to the point where all of the level control range is usable (the procedure for this is described in the OPERATION section).

Note that the MASTER level control also has a PRESET GAIN adjustment, which is used in conjunction with the "0 dBu / +4" switch (see below). This is useful if the AM300 output is too "hot" for a power amplifier lacking an input level control.



INPUT SELECTOR SWITCHES

Each input channel has an associated selector switch. They have different functions for different channels, and are listed below:

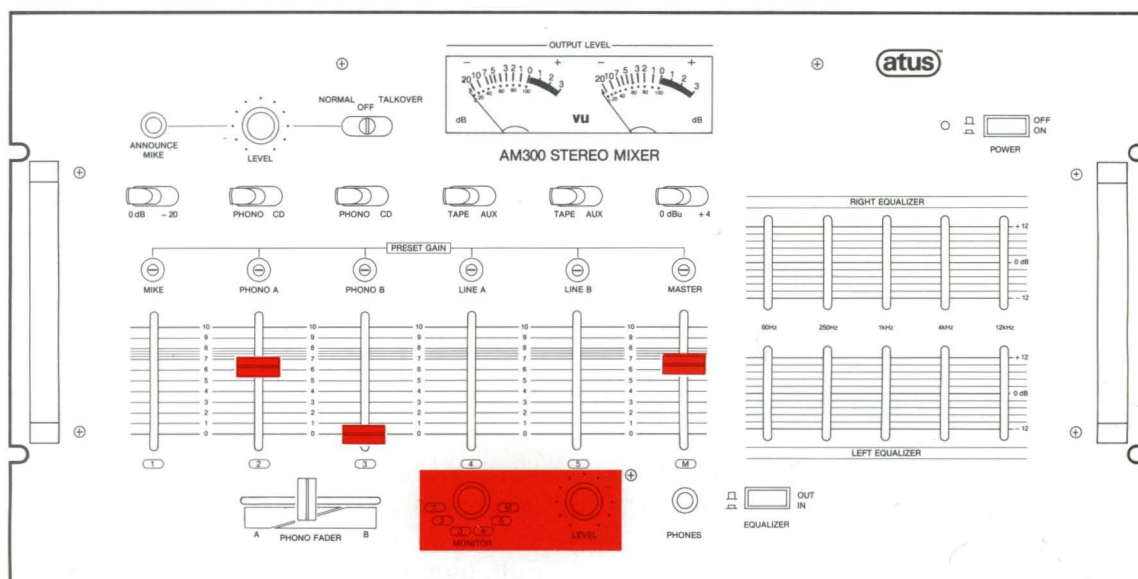
Channel #	Switch	Function
1 (MIKE)	0 dB/ - 20	An additional level control, or "input pad", for the mike input. Use the - 20 position only if the microphone input is overloading and/or distorting.
2 (PHONO A)	PHONO/CD	Selects between PHONO A and CD A.
3 (PHONO B)	PHONO/CD	Selects between PHONO B and CD B.
4 (LINE A)	TAPE/AUX	Selects between TAPE A and AUX A.
5 (LINE B)	TAPE/AUX	Selects between TAPE B and AUX B.
M (MASTER)	0 dBu/ + 4	Sets the output level at the AMP outputs, to accomodate different power amp voltage requirements.

MONITOR

The monitor circuit allows the operator to listen to a signal other than what is appearing at the final outputs. This is especially useful for "cueing" a record or tape while another selection is playing.

The monitor signal is sent **only** to the stereophones, and is independent of the phono fader and the channel and master level controls. The level of the monitor signal is determined by the stereophone LEVEL control.

Set the front panel controls as shown:

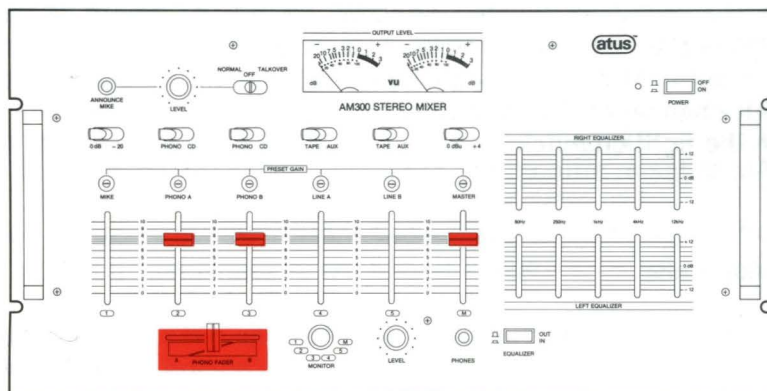


1. Start a record playing on PHONO A. Listen through the stereophones. Note the level of the signal.
2. Set the monitor switch to 2 (PHONO A). Note how the level is independent of the PHONO or MASTER level controls.
3. While PHONO A is playing, start a second record on PHONO B.
4. Set the monitor switch to 3 (PHONO B). The signal from PHONO B comes through the stereophones, even though the signal from PHONO A is present at the mixer output.

FADER

The phono fader continuously controls the relative levels of the signals at channels 2 and 3. This is useful for smoothly moving from one selection to another, with no intervening silence.

Set the front panel controls as shown:



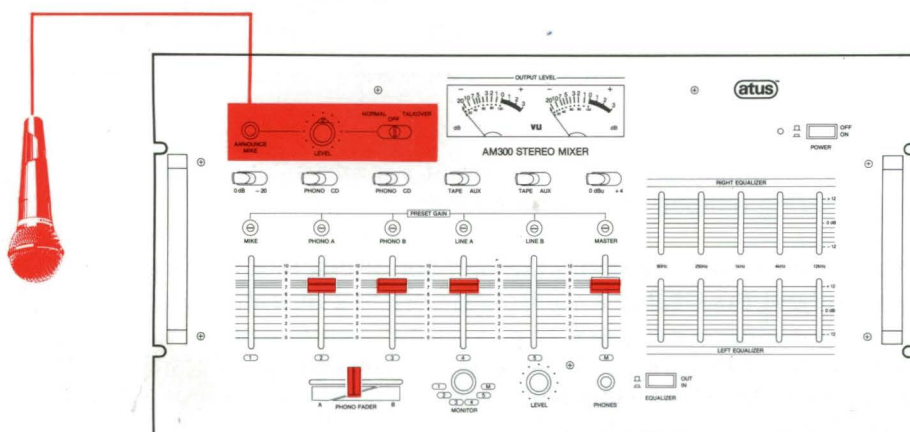
1. Start a record playing on PHONO A. Prepare a second selection on PHONO B.
2. As the selection on PHONO A reaches its end, start the selection on PHONO B and slowly move the fader to the PHONO B position. The sound of selection A will gradually be replaced by that of selection B.

In the center position, the two channels are balanced, and may be used normally.

ANNOUNCE MIKE

This front-panel microphone input is designed to be used for announcements while music is playing. It is mixed equally into both channels.

Set the front panel controls as shown:



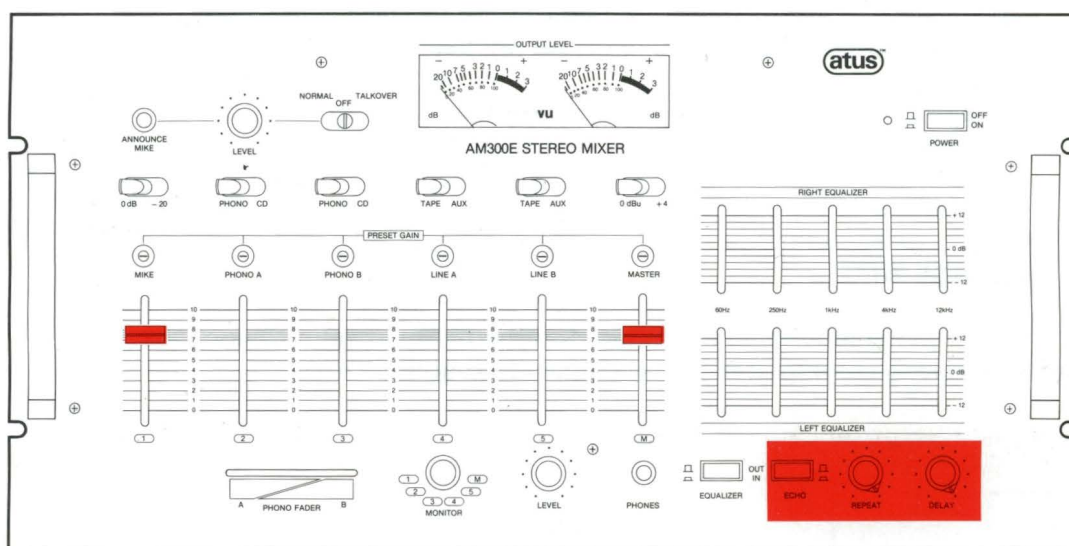
1. Start a record, CD, or tape.
2. While the music is playing, move the announce mike switch to the TALKOVER position. The level of the music will drop by approximately 10 dB, allowing the announcement to be clearly heard, without interrupting the flow of the music.
3. In the NORMAL position, there is no reduction in the music channel levels.

NOTE: In the OFF position, the announce mike signal is not present at the AM300 output, but it is audible through the monitor circuit, when the monitor is set to MIKE. In this position, the announce mike will be heard on the left channel of the stereophones, and the front-panel mike will be heard on the right channel.

ECHO (AM300E only)

When the ECHO switch is set to the IN position, the left and right channel outputs of the mixer are run through an electronic analog delay circuit. This circuit will produce echo effects at variable rates and intensities.

Set the front panel controls as shown:



1. Speak into the microphone. (Short consonant sounds will work best.) Note the slowly-occurring echoes after each sound.
2. The REPEAT control will determine the number of discrete repeats for each sound. Adjust the REPEAT control so only one repeat is heard.
3. The DELAY control will determine the speed of the repeats. Turn the DELAY control counterclockwise. Note how the single repeat comes more quickly after the original sound.

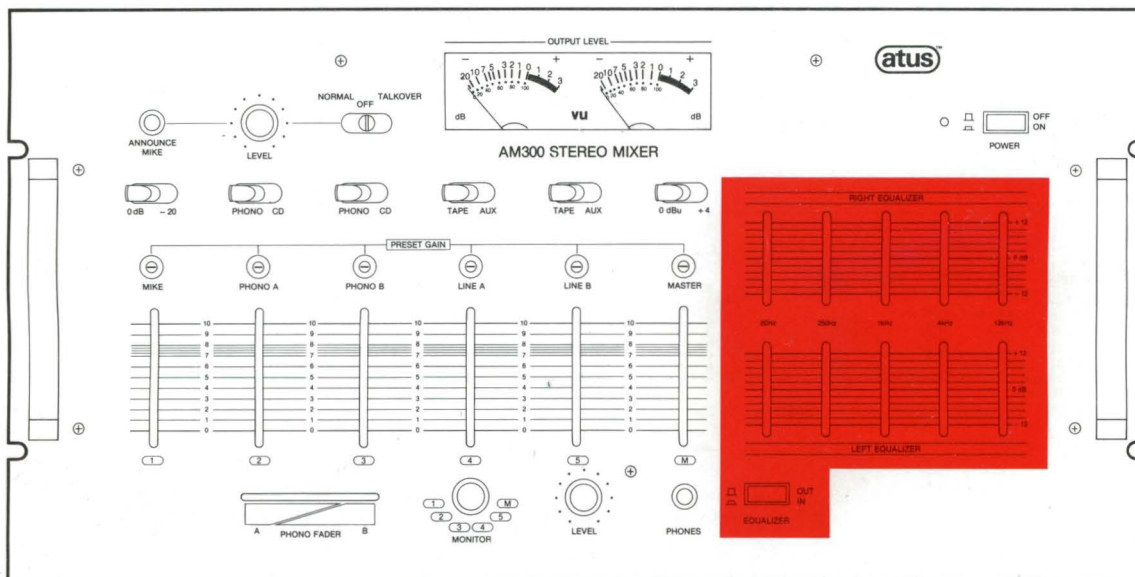
The REPEAT control determines an absolute number of repeats which will remain constant at any DELAY setting; if the REPEAT control is set for one "echo" at a slow speed, setting the DELAY control for a faster rate will not produce more total repeats.

Generally speaking, slower repeat rates make good "special effects" while faster repeats can be used to simulate the rapid "slapback" echo present in a medium-sized room with little carpeting or drapery. Rapid repeat rates can often be used to "warm up" the sound of a system in a very muffled room. Interesting effects can be generated by moving the DELAY control while repeats are sounding.

The delay circuitry occurs at the end of the mixer signal path; it can be heard through the monitor stereophones only when the monitor is set to MASTER.

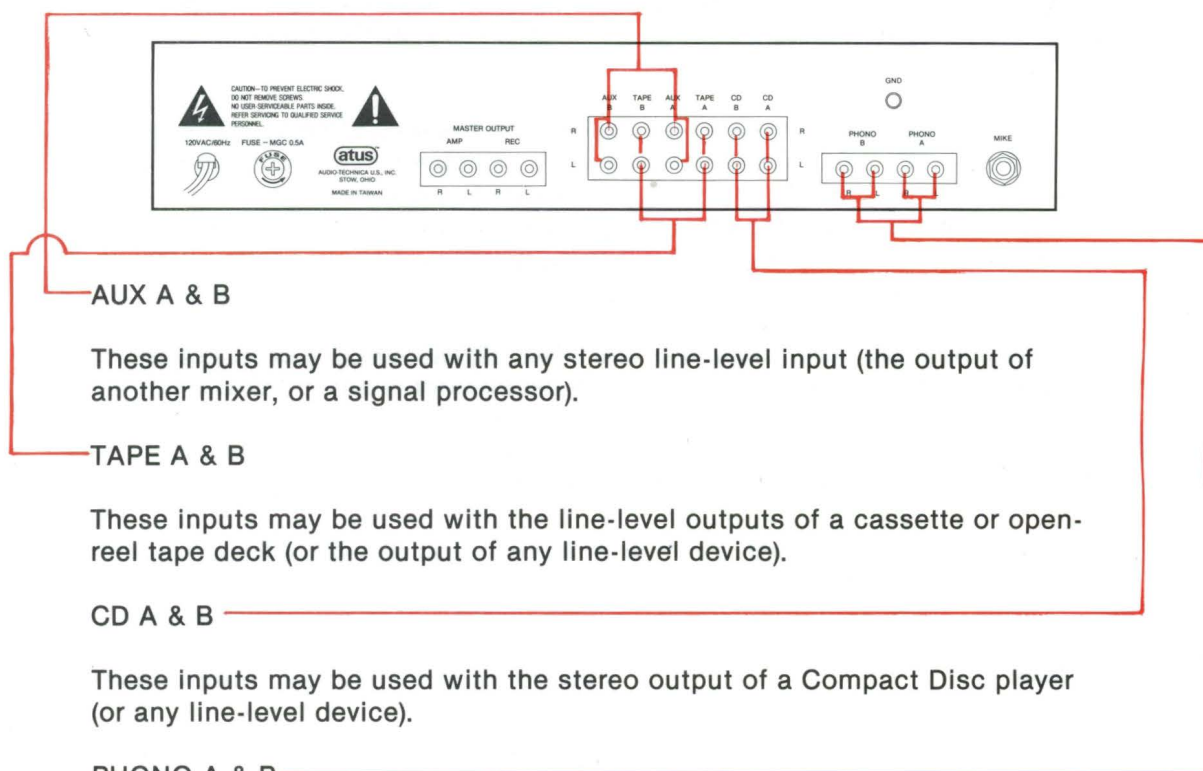
The output of the delay circuitry is applied equally to both output channels; it will always appear at the center of the stereo image.

EQUALIZER



The graphic equalizer is a dual independent 5-band type with center frequencies of 60 Hz, 250 Hz, 1 kHz, 4 kHz, and 12 kHz. The equalizer provides much more precise control than conventional tone controls. Each slide control can provide up to 12 dB of cut or boost. The equalizer will affect all inputs on the AM300, and is switched in or out with the front-panel EQUALIZER switch.

REAR PANEL CONNECTIONS



AUX A & B

These inputs may be used with any stereo line-level input (the output of another mixer, or a signal processor).

TAPE A & B

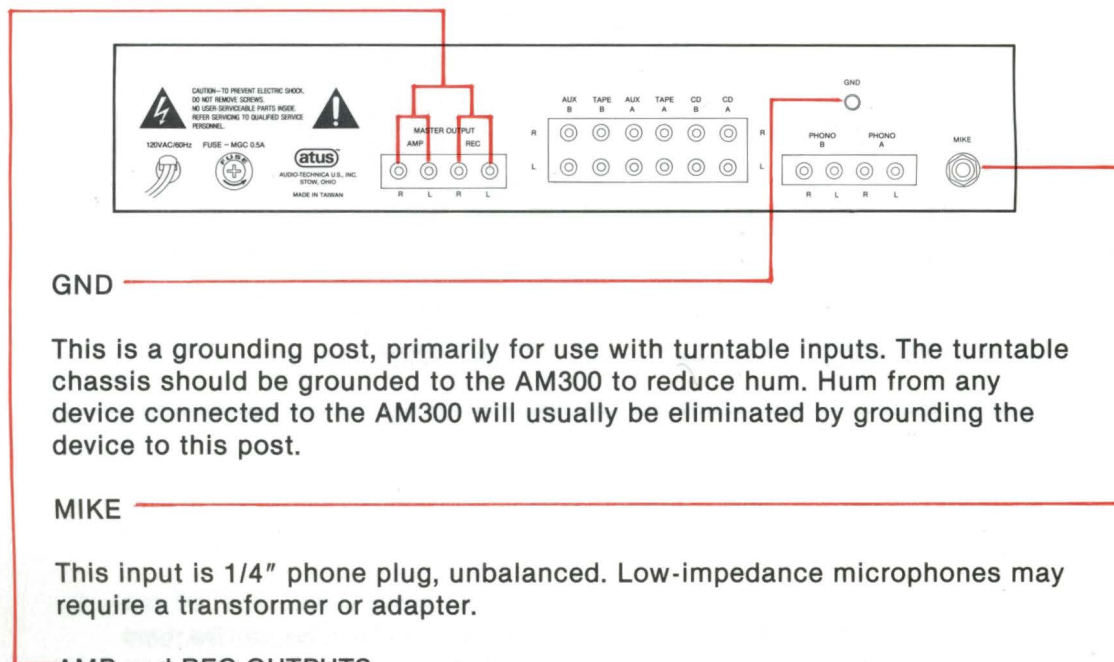
These inputs may be used with the line-level outputs of a cassette or open-reel tape deck (or the output of any line-level device).

CD A & B

These inputs may be used with the stereo output of a Compact Disc player (or any line-level device).

PHONO A & B

These inputs are specially equalized for use with magnetic phono cartridges. No other devices should be used with these inputs.



GND

This is a grounding post, primarily for use with turntable inputs. The turntable chassis should be grounded to the AM300 to reduce hum. Hum from any device connected to the AM300 will usually be eliminated by grounding the device to this post.

MIKE

This input is 1/4" phone plug, unbalanced. Low-impedance microphones may require a transformer or adapter.

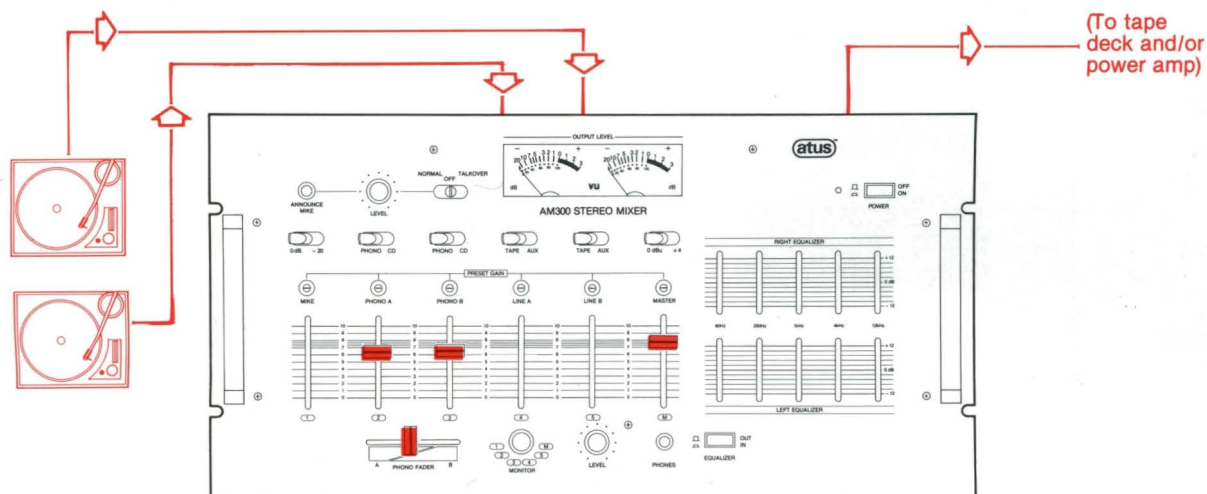
AMP and REC OUTPUTS

These are parallel line-level outputs, one pair to be connected to the inputs of a stereo power amplifier, and the other to the recording inputs of a tape deck.

USING THE AM300

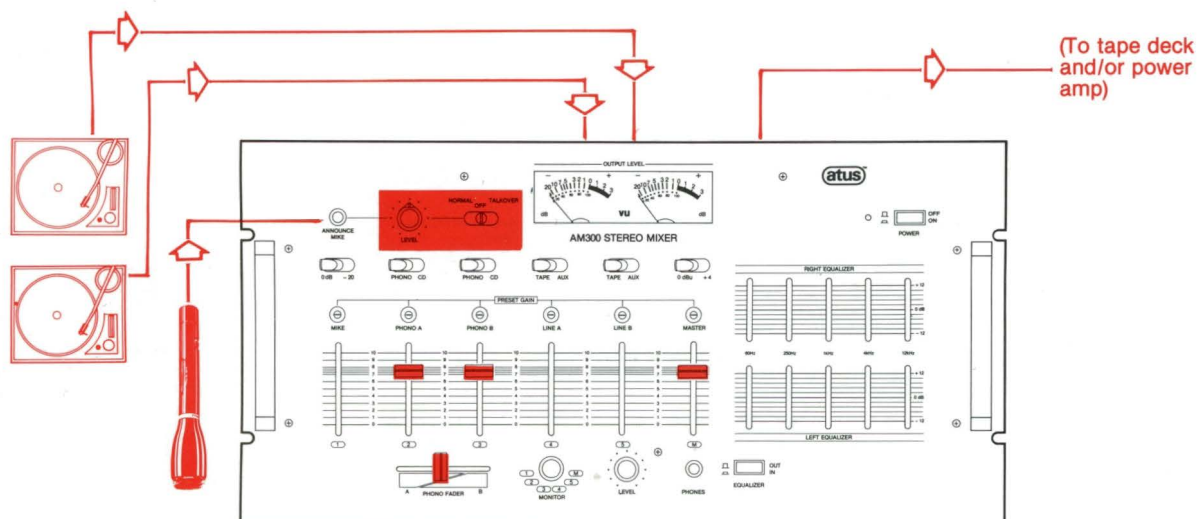
Listed here are several possible setups for the AM300.

Two turntables



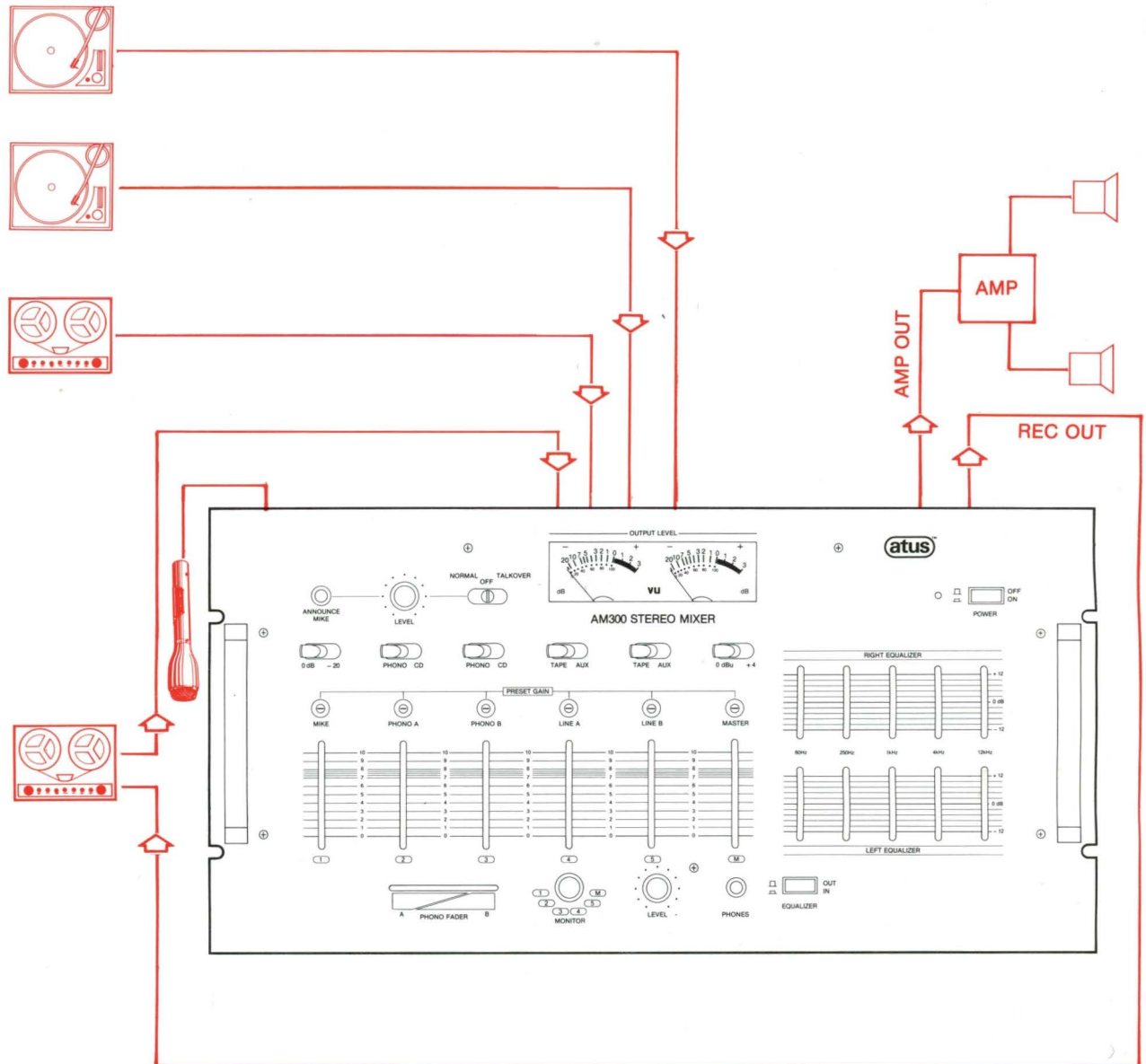
This setup allows the operator to fade between the two phono inputs for continuous music. The output of the AM300 can be routed to the input of a tape deck (for recording), and/or to a power amp (for live performances or monitoring).

Two turntables plus announce mike



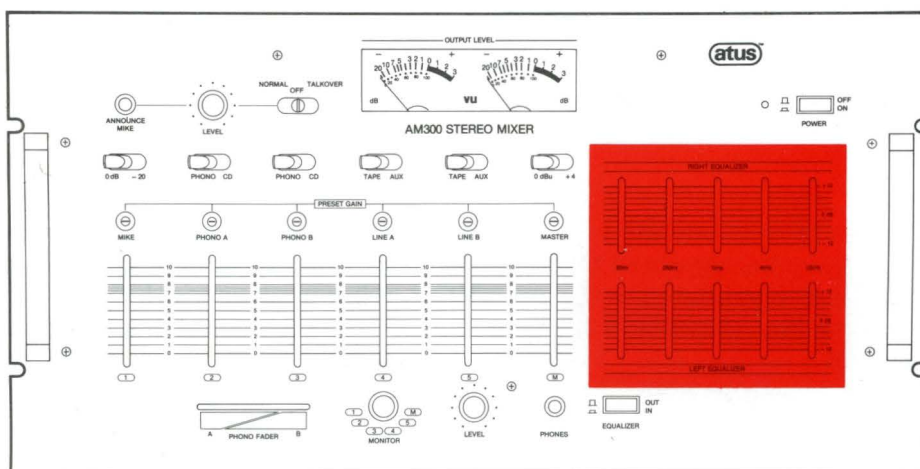
In this setup, the operator can fade between the two phono inputs and, at any time, insert announcements without stopping the music, by activating the TALKOVER function. The level of the announce mike is set with the front-panel LEVEL control.

Sending a mixed signal to tape



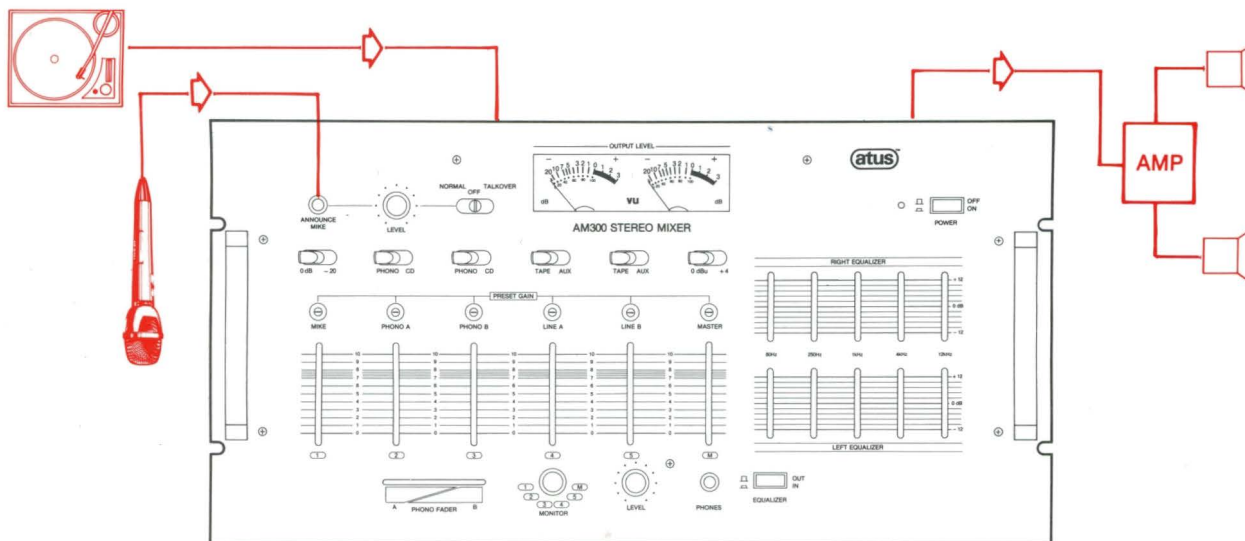
Note that, in this setup, the AM300 output is sent to the input of tape deck 2, and the output of tape deck 2 goes back into the mixer. This can result in a feedback loop with some tape machines if the LINE B level control is up while recording, but it is the most flexible setup. The operator can mix the microphone, both turntables, TAPE A, and AUX B, and play back the resultant mixed tape, without repatching cables.

General live setups



One of the most important functions of the AM300 mixer when used in live performance is equalization. In a live environment, different rooms can have different acoustic resonances, which can result in “boomy”, or “piercing” sound. The equalizer can help by reducing the output of the mixer in the frequency bands that are strong in any given room. Equalization can also reduce microphone feedback.

Try to keep as many EQ sliders as possible near the 0 dB (flat) position; radical settings can place extreme demands on amplifiers and speakers, and can cause distortion.



Whenever possible, keep the mixer (and the connected devices) away from and **behind** the speakers. If the speakers are near and/or pointing directly at the microphones, feedback can occur. Acoustic feedback can also occur from phono turntables, usually at lower frequencies. This can be avoided by making sure the turntable rests on a solid, non-resonating surface, and is isolated from the speakers.

TROUBLESHOOTING

If the mixer fails to operate normally, check the following points to determine if the fault can be corrected by one of the suggested measures. If it cannot, or if the fault is not listed in the SYMPTOM column, disconnect the power cord and contact your Audio-Technica dealer or the Audio-Technica Service Department.

SYMPTOM	CAUSE	SOLUTION
No power	AC cord not connected No AC at outlet Blown fuse	Connect cord Find live outlet Replace fuse
No signal	Input selector set wrong Using wrong channel Improper connections Phono fader set wrong	Change input selector switch Check channels Check connections Adjust fader
Signal isn't loud enough	Level control not up Preset gain turned down "0 dB/ - 20" set wrong "0 dBu/ + 4" set wrong Impedance mismatch Mike set for "talkover" Equalizer sliders down Phono fader set wrong Input selector set wrong	Turn up level control Turn up preset gain Adjust mike switch Adjust mike switch Check impedance Adjust mike switch Raise EQ sliders Adjust fader Change input selector switch
Signal is too loud/ distorted	Preset gain set wrong Impedance mismatch "0 dB/ - 20" set wrong "0 dBu/ + 4" set wrong EQ sliders too high	Adjust preset gain Check mike impedance Adjust mike switch Adjust master switch Adjust EQ sliders
No signal at stereophones	Monitor set wrong Phones level down Fader set wrong	Adjust monitor switch Adjust level Adjust fader

SPECIFICATIONS

Input Sensitivity/Impedance

Announce mike	0.5 mV/600 ohms
Mike	0.5 mV/600 ohms
Phono A & B	3 mV/50 k ohms
CD A & B	150 mV/100 k ohms
Tape A & B	150 mV/100 k ohms
Aux A & B	150 mV 100 k ohms

Output 0.775V/1.22V (+ 4 dBu)

Frequency response 30-20,000 Hz ± 1.5 dB

Equalizer

Center frequency	60 Hz, 250 Hz, 1 kHz, 4 kHz, 12 kHz
Boost/cut range	± 12 dB at center frequency

Distortion Less than 1%

Crosstalk Better than - 50 dB

Signal-to-noise ratio

Line	55 dB
Phono	50 dB
Mike	40 dB

Stereophone impedance 4-16 ohms

Echo section (AM300 only)

Type	Analog electronic delay
Delay time	30-200 ms

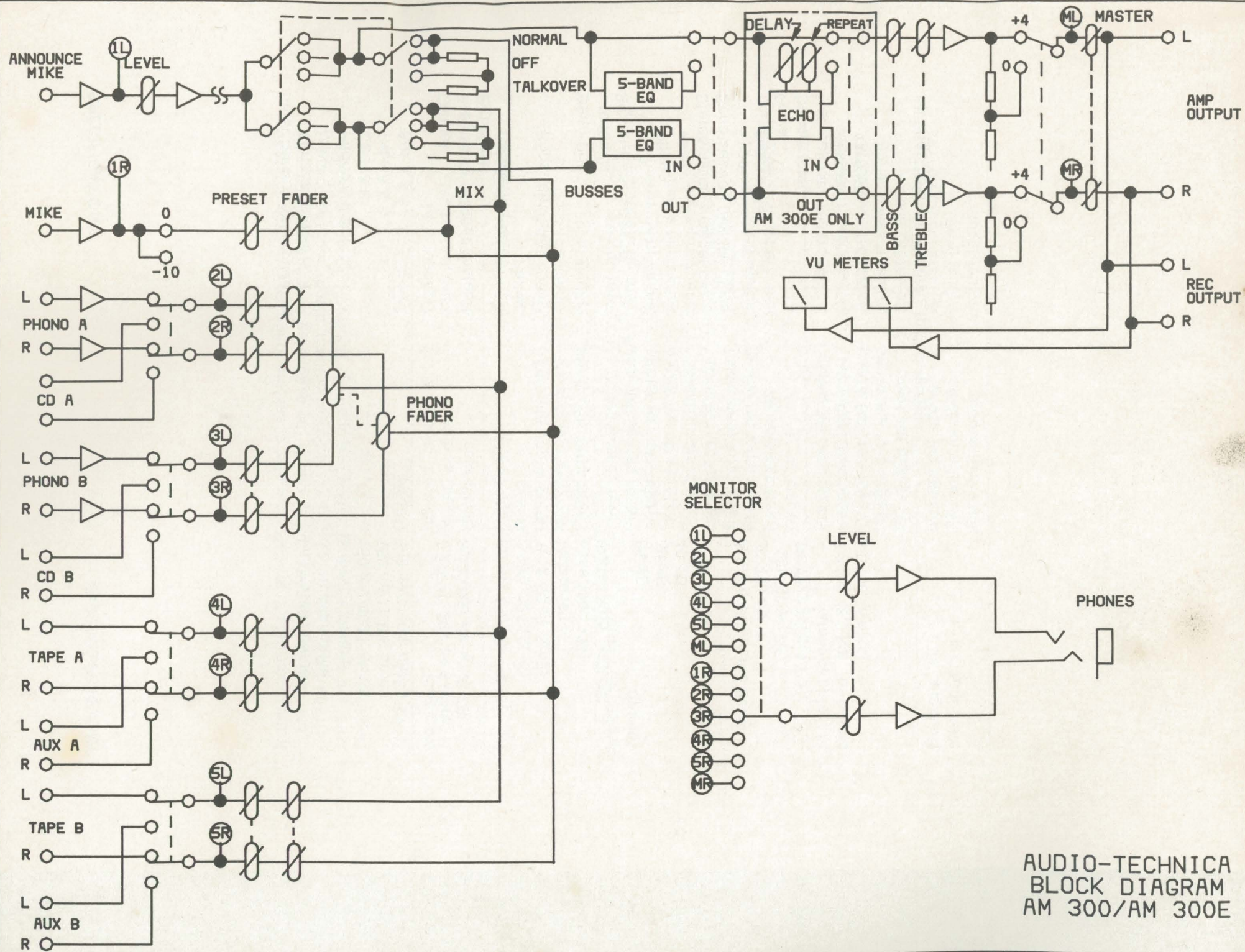
Power 120V/60 Hz AC

Dimensions 19"Wx9.5"Dx4.7"H

Net weight

AM300	7.2 lbs. (3.3 kg)
AM300E	7.6 lbs. (3.5 kg)

All specification reference 0VU = 0.775V





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